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Urban planning and management information systems analysis and design based on GIS

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Abstract.

Based on the analysis of existing relevant systems on the basis of inadequate, after a detailed investigation and research, urban planning and management information system will be designed for three-tier structure system, under the LAN using C / S mode architecture. Related functions for the system designed in accordance with the requirements of the architecture design of the functional relationships between the modules. Analysis of the relevant interface and design, data storage solutions proposed. The design for small and medium urban planning information system provides a viable building program.

Keywords-GIS;Urban Planning; Information System; Design

1. Introduction

At present, many small cities have developed their own planning and management information systems, management information systems which have their own characteristics. According to its development platform, can be divided into three categories: First, the office automation management information systems based on the existing database management software, such systems can only be a simple document information storage, information, operation, and graphic information can do nothing, No GIS (geographic information system)functions. Clearly, such systems can not meet the Planning Board's business office and information management requirements, the system lacks integrity. Another single GIS platform as the basis for the development, but generally more difficult this way, the development cycle is longer[1]. As a result, many developers choose to develop a third way, namely, cross-platform development - MIS capabilities in database management software platform, GIS functionality in GIS platform development. This will be a complete office management information systems planning artificial division into two parts, between the two parts of the switching frequency, not only easily lead to system instability, a waste of valuable computer resources and will increase the system overhead and costs , resulting in substantial increase in the user's development costs[2]. Since a system

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using two platforms, but also limits the system scalability, maintainability of the system will also be greatly reduced.

Comparison of three methods based on the development, as well as a large number of practical engineering experience in project development, the key to this design is truly the first "integrated graphics", especially in the deep data integration to achieve "integrated graphics"; second is to how to adopt a flexible, adaptive, tool-based management; addition is to ensure system scalability, as set multiple functional interface to realize the special needs of the user service customization and with the outside world the data import and export data[3]. Thus, the OA office and closely integrated GIS technology in one system, speed, scalability, availability and maintainability have been very good guarantee.

2. Business planning and management of information systems

This article will assist small and medium urban planning and management of business functions can be divided into "Planning and Management", "file management" and "administrative office", "auxiliary management", "sales chart and technical services", "information dissemination" of six parts. All the features of the system are closely around the "Planning and Management" Business expand, each business function is another link between the interaction.

The data flow between business functions shown in Figure 1.

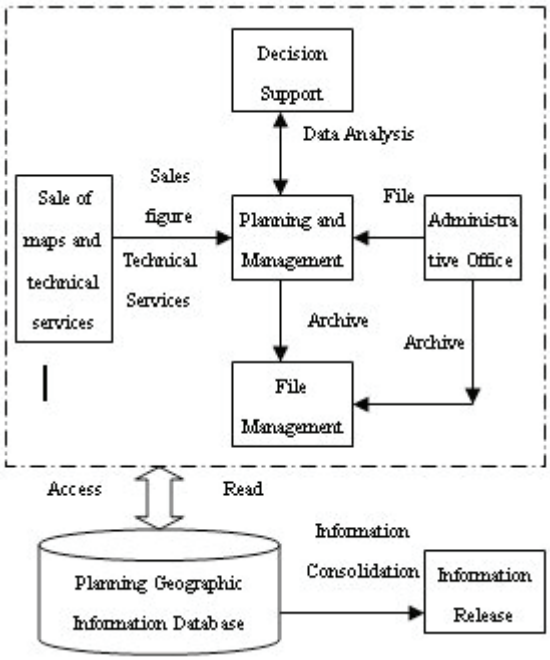

Figure1. The data flow between business functions

3. System architecture design

Urban planning and management information system is mainly a business process, do the text focus on process control management system to be divided into three structural system, the use of the LAN under the C / S mode architecture. Manage use of specialized GIS software and components, maintenance of spatial data management and data conversion. Three-tier structure: the data layer, including databases, spatial data engine, ArcSDE, function is to store and provide data; business layer (the application logic layer), including application servers, GIS component MapObjects, other components, and network